



# AUTOMATIC ELECTRONIC GLASS CHECK FIXTURE

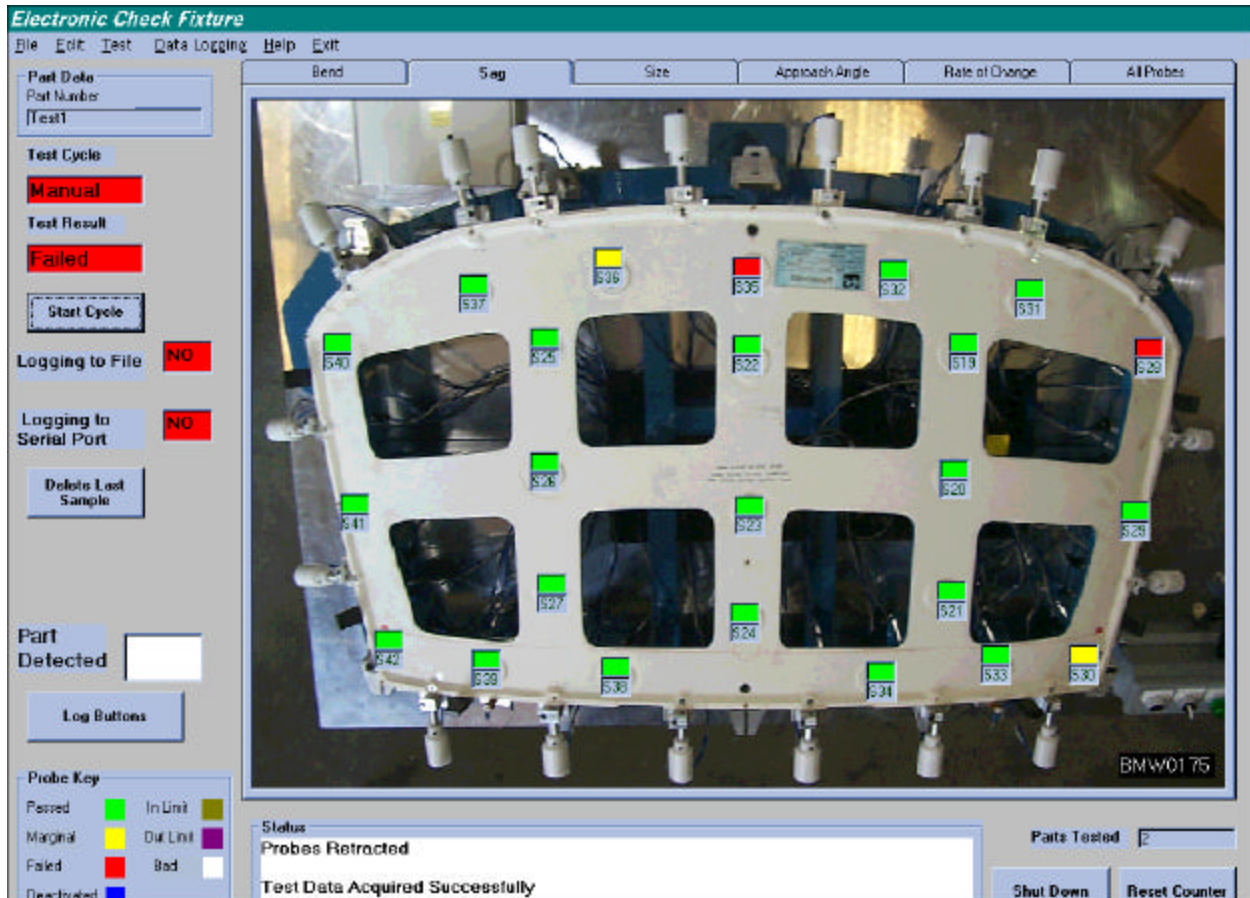
Cart Fabrication, Electronics and Software by *I²T*, Pittsburgh, PA. The glass fixture is provided by the customer to *I²T* for mounting of the digital probes.



The Electronic Check Fixture is a portable system that measures critical points on a finished piece of glass. The test results and location of the data probes are displayed on a pictorial outline of the part that is user defined. The standard 64-digital probe system can be setup to read and save bend, sag, size, rate-of-change, and approach angle data and output this data to an SPC system, a data file, or a printer. Testing can be accomplished manually or automatically. Tests have proven that these systems are reliable, repeatable, accurate, and can be used for 100% on-line inspection. Digital probes provide accuracies to greater than 0.01 mm. Plant air at 15 PSI and 120VAC at 15A is all that is necessary to run the check fixture system.

## SOFTWARE

The CHECK FIXTURE software is user-friendly. The multi-part software can be setup and/or edited for various shapes of parts (i.e., backlites, windshields, sidelites) using the pull-down menus.



### FILE Menu

Clicking on the FILE menu, a part can be opened, closed, added, deleted or you can exit the CHECK FIXTURE software.

### EDIT Menu

Clicking on the EDIT Menu, the part parameters (i.e., part limits, probe setup) can be edited. Also, the probes can be calibrated individually with a calibrate gauge block or all probes can be calibrated with a calibrate fixture.

### TEST Menu

Clicking on the TEST Menu, the test data results can be viewed, showed (displayed) on the pictorial display or the pictorial display with probe locations and last tested part data can be printed.

## **DATA LOGGING**

Clicking on the DATA LOGGING menu, a new file can be created, current file can be emptied, closed, or saved to the floppy drive (or other media) and data logging can be enabled/disabled.

## **HARDWARE**

The hardware is comprised of an industrial computer with a touch-screen and keyboard, 120 VAC inputs/outputs, digital probes and a drawer with a probe connector/pneumatic panel. The hardware is mounted on a non-adjustable height cart.

### **INDUSTRIAL COMPUTER**

The 700MHZ Pentium III Industrial Computer is a 6-slot wallmount/desktop IPC chassis that is compact and rugged. It has a 3.5 IDE 20 GB HDD, 3.5", 1.44MB floppy drive, 48X IDE CD-ROM and 128MB DIMM.

### **TOUCH SCREEN**

The 15-inch color LCD Industrial Flat Panel Touch-screen Monitor features a resolution of 1024 x 768 and stainless steel chassis.

### **INDUSTRIAL KEYBOARD**

The 114-key Industrial keyboard is protected with an industrial silicone rubber material. The life of the keyboard is greater than 10 million cycles.

### **SOLARTRON DIGITAL PROBES**

The standard probe used on the system is the Solartron Feather Touch Digital Probe. The 10mm stroke probe specifications are: pneumatic extended; retracted by an 18-gram spring; right angle electrical and pneumatic connections; armored electrical cable. The 10mm stroke is sufficient to measure the deviation between glass and part design.

The Probe Interface Electronics (PIE) is permanently attached to the probe head by a 2m cable and plugs into the T-CON connector on the probe connector/pneumatic panel.

### **OPTO 22 INPUT/OUTPUT (I/O)**

An Opto 22 I/O board with 16 I/O points is interfaced between the industrial computer and the pushbutton control station, probe solenoid air valves, and automatic-mode optical switches.

### **PROBE CONNECTOR/PNEUMATIC PANEL**

The probe connectors (T-CON) and pneumatic panel are mounted in a drawer for ease of maintenance. The two 32 probe connector tracks are mounted in a vinyl track that allows the connectors to be replaced with very little effort. The T-CON connectors are connected together in serials by a DB-9 connector.

The four pneumatic manifolds for each track have a ¼inch pipe input port at each end and eight 1/8-inch pipe output ports. 1/8 inch OD Ether-based Polyurethane tubing supplies air from the manifolds to the probes.

### **CART**

The fixture, the industrial computer and associated hardware are mounted on a cart constructed of 2 inch square steel tubing with 5/8 inch machined aluminum top plate, 14 gage steel bottom plate and 6 inch phenolic casters. The cart is enclosed between the top plate and the bottom shelf with Lexan panels on all four sides. The panels are divided in halves and are hinged for easy access to the components mounted on the bottom shelf or the probe connector/pneumatic panel drawer.

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